

Installing and Configuring the Control Card

This chapters describes the procedures for installing and configuring control cards.

The sections are:

- NTP-L41 Installing and Configuring the TNC, TNCE, TSC, TSCE, TNCS, or TNCS-O Card, on page 1
- Filler and Blank Cards, on page 7

NTP-L41 Installing and Configuring the TNC, TNCE, TSC, TSCE, TNCS, or TNCS-O Card

Purpose	This procedure describes how to install and configure the TNC, TNCE, TSC, TSCE, TNCS, or TNCS-O card.
Tools/Equipment	Redundant TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards on Cisco NCS 2006 shelf (required) Stand-alone TNC/TNCE/TSC/TSCE card on Cisco NCS 2002 shelf (required) Redundant TNCS/TNCS-O cards on the Cisco NCS 2015 shelf (required)
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	Provisioning or higher

Warning **During this procedure, wear grounding wrist straps to avoid ESD damage to the card. Do not directly touch the backplane with your hand or any metal tool, or you could shock yourself.** Statement 94

Caution Always use the supplied ESD wristband when working with a powered NCS 2002, NCS 2006, or NCS 2015 shelf assemblies. For detailed instructions on how to wear the ESD wristband, refer to the Electrostatic Discharge and Grounding Guide for Cisco NCS 2000 Series.

Note If you install a card incorrectly, the FAIL LED flashes continuously.

Procedure

Step 1 Complete DLP-L62 Installing the TNC, TNCE, TSC, TSCE, TNCS, or TNCS-O Card, on page 2.

Step 2 Complete DLP-L63 Provisioning PPM and Port for the TNC,TNCE, and TNCS Cards, on page 5 .

Step 3 Complete DLP-L64 Configuring UDC and VoIP for the TNC, TNCE, TNCS, and TNCS-O Cards, on page 6 .

Stop. You have completed this procedure.

DLP-L62 Installing the TNC, TNCE, TSC, TSCE, TNCS, or TNCS-O Card

Purpose	This task installs redundant TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards on the NCS 2006 shelf, a stand-alone TNC/TNCE/TSC/TSCE card on the NCS 2002 shelf, and redundant TNCS/TNCS-O cards on the NCS 2015 shelf. Install and initialize the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card before installing any other line cards into the shelf assemblies. On the NCS 2006 shelf, install the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards in slots 1 and 8 for redundancy. On the NCS 2002 shelf, install the stand-alone TNC/TNCE/TSC/TSCE card in slot 1. On the NCS 2015 shelf, install the TNCS/TNCS-O cards in slots 1 and 17 for redundancy.
Tools/Equipment	• Two TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards for the NCS 2006 shelf • One TNC/TNCE/TSC/TSCE card for the NCS 2002 shelf • Two TNCS/TNCS-O cards for the NCS 2015 shelf
Prerequisite Procedures	None
Required/As Needed	Required
Onsite/Remote	Onsite
Security Level	None

Caution Do not remove the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards during the software installation process, which is indicated by alternate flashing FAIL and ACT/STBY LEDs. Removing the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards during the software installation process will corrupt the system memory.

Note Allow each TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card to boot completely before installing the redundant TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card.

Note On the NCS 2006 shelf, install the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards in slots 1 and 8 for redundancy. On the NCS 2002 shelf, install the stand-alone TNC/TNCE/TSC/TSCE card in slot 1. On the NCS 2015 shelf, install the TNCS/TNCS-O cards in slots 1 and 17 for redundancy.

Note You cannot insert the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards in other slots due to mechanical constraints. To identify the card slot, match the symbol placed on the lower side of the card front panel with the symbol in the shelf.

Note The firmware upgrade of the OTDR functionality of the TNCS-O card might take up to 1 hour and 15 minutes, depending on the node configuration. An automatic retry mechanism is available in case of any issues during the upgrade. The TNCS-O card is fully functional during the firmware upgrade except for the OTDR feature, which is available only after the completion of the firmware upgrade.

Caution To achieve redundancy, two TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards must be installed in the NCS 2006 shelf or two TNCS/TNCS-O cards must be installed in the NCS 2015 shelf.

Procedure

Step 1 Open the latches/ejectors of the first TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card that you will install.

Step 2 Use the latches/ejectors to firmly slide the card horizontally along the guide rails until the card plugs into the receptacle at the back of the slot (slot 1 or 8 in the NCS 2006 shelf, slot 1 in the NCS 2002 shelf, and slot 1 or 17 in the NCS 2015 shelf).

Step 3 Verify that the card is inserted correctly, and close the latches/ejectors on the card.

If you insert a card into a slot assigned for a different card, all LEDs turn off.

Step 4 As needed, verify the LED activity on the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card.

- The red FAIL LED, PWR LED turn on briefly.
- The red FAIL LED turns on for about 10 seconds.
- The red FAIL LED and the amber ACT/STBY LED turn on for about 30 seconds.
- The red FAIL LED blinks for about 10 seconds.
- The red FAIL LED turns on for about 15 seconds.
- All the LEDs including the CRIT, MAJ, MIN, REM, SYNC, and ACO LEDs blink once and turn off for about 10 seconds.
- ACT/STBY LED blinks for about 1 second.
- All the LEDs including the CRIT, MAJ, MIN, REM, SYNC, and ACO LEDs turn off for about 10 seconds.
- The ACT/STBY, ACO, and PWR LEDs turn on.
- The boot-up process is complete when the PWR LEDs turn green and the amber ACT/STBY remains on. The ACT/STBY LED turns green if this is the first TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card installed, and amber if this is the second TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card installed.

Note
It might take up to four minutes for the power alarms to clear.

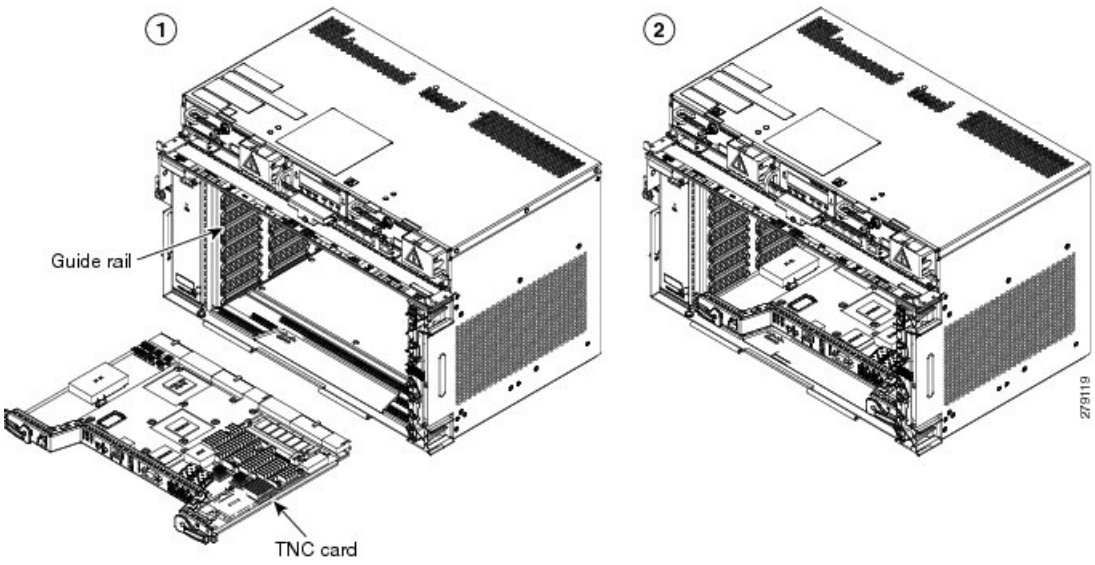
Note
Alarm LEDs might be on. After completing the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card installation, log in to CTC and click the Alarms tab to display the alarms raised on the card. For procedure to clear the alarm, see the *Cisco NCS 2000 Series Troubleshooting Guide*.

Note
During the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card initialization, the SFTWDOWN alarm appears twice. The alarm clears after the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card boots completely.

Note
If the FAIL LED is on continuously, see the tip in Step 9 about the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card automatic upload.

The following figure illustrates the installation of TNC and TNCE cards on NCS 2006 shelf.

Figure 1: Installing TNC and TNCE cards on NCS 2006 Shelf



Step 5 Verify that the ACT/STBY LED is green if this is the first powered-up TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card installed or amber if this is the second powered-up TNC/TNCE/TSC/TSCE/TNCS/TNCS-O. The IP address, temperature of the shelf, and time of day appear on the LCD. The default time and date is 12:00 AM, January 1, 1970.

Step 6 The LCD cycles through the IP address (the default is 192.1.0.2), shelf name, and software version. Verify that the correct software version is shown on the LCD. The software text string indicates the shelf type (SDH or SONET) and software release. The numbers following the release number do not have any significance.)

Step 7 If the LCD shows the correct software version, continue with Step 8. If the LCD does not show the correct software version, refer to your next level of technical support, upgrade the software, or remove the TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card and install a replacement card. Refer to the release-specific software upgrade document to replace the software.

Step 8 (NCS 2006 shelf only) Repeat Steps 1 through 7 for the redundant TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card.

Step 9 (NCS 2015 shelf only) Repeat Steps 1 through 7 for the redundant TNCS/TNCS-O card.

Tip
If you install a standby TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card that has a different software version than the active TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card, the standby TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card copies the software version from the active TNC/TNCE/TSC/TSCE/TNCS/TNCS-O card. When the standby card is first inserted, the LEDs follow the normal boot-up sequence. However, after the red FAIL LED turns on for about 5 seconds, the FAIL LED and the ACT/STBY LED begin to flash alternately for up to 30 minutes. After loading the new software, the upgraded TNC/TNCE/TSC/TSCE/TNCS/TNCS-O cards LEDs repeat the appropriate bootup sequence, and the amber ACT/STBY LED turns on.

Step 10 Return to your originating procedure (NTP).

DLP-L63 Provisioning PPM and Port for the TNC,TNCE, and TNCS Cards

Purpose	This task provisions a PPM and port on a TNC, TNCE, and TNCS cards. PPMs are created to support the OSC function.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	None

Procedure

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TNC, TNCE, and TNCS cards where you want to provision PPM and port settings.

Step 2 Click the **Provisioning** > **Pluggable Port Modules** tabs.

Step 3 In the Pluggable Port Modules area, click Create. The Create PPM dialog box appears.

Step 4 In the Create PPM dialog box, complete the following:

- PPM—Choose 1 or 2 from the PPM drop-down list.
- PPM Type—Displays the PPM associated with the chosen PPM in the above step.

Step 5 Click **OK**. The newly created PPM appears in the Pluggable Port Modules area. The row in the Pluggable Port Modules area becomes white when the PPM is inserted and the Actual Equipment Type column lists the name of PPM.

Step 6 In the Pluggable Ports area, click Create. The Create Port dialog box appears.

Step 7 In the Create Ports dialog box, complete the following:

- Port—Choose the port you want to configure from the Port drop-down list.
- Port Type—Choose the port type, such as OC-3, FE, or ONE-GE from the Port Type drop-down list.

Note
OC-3 can be configured only on PPM port 1. FE and ONE-GE can be configured on both the ports.

Step 8 Click **OK**. The newly created port appears in the Pluggable Ports area. The port type you provisioned is listed in the Rate column.

Step 9 Repeat Steps 3 through 8 to provision another PPM and port on the TNC and TNCE cards.

Step 10 Return to your originating procedure (NTP).

DLP-L64 Configuring UDC and VoIP for the TNC, TNCE, TNCS, and TNCS-O Cards

Purpose	This task configures UDC and VoIP traffic for the TNC, TNCE, TNCS, and TNCS-O cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC NTP-G38 Provision OSC Terminations DLP-L63 Provisioning PPM and Port for the TNC,TNCE, and TNCS Cards, on page 5
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	None

Note Each TNC,TNCE, TNCS, and TNCS-O card support UDC/VoIP configuration. You can configure UDC or VoIP on the SFP ports present on the TNC, TNCE, and TNCS cards. The TNC, TNCE, and TNCS cards support the UDC/VoIP configuration only when OSC is provisioned on the SFP ports.

Note If two shelves are connected through the fiber and if the TNC and TNCE cards in one shelf has UDC configuration, the TNC and TNCE cards in the other shelf must also have UDC configuration. The same rule applies to VoIP configuration.

Procedure

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TNC, TNCE, or TNCS/TNCS-O cards where you want to configure UDC and VoIP.

Step 2 Click the **Provisioning > UDC / VOIP** tabs.

Step 3 From the Service Type drop-drop list, choose UDC or VOIP.

Note
You can configure UDC or VoIP on only one SFP port at a time per TNC, TNCE, and TNCS cards. If you want to configure UDC or VoIP on another SFP port, choose NONE from the Service Type drop-down list for the first port and then choose UDC or VoIP for the second port.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

Filler and Blank Cards

Filler cards must be installed in unused and empty slots to ensure proper air flow and electromagnetic interference (EMI) requirements during the Cisco NCS 2002, Cisco NCS 2006, and Cisco NCS 2015 operation. CTC detects filler cards from R10.6 onwards.

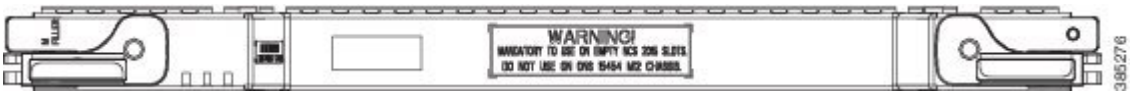
Note It is mandatory to use filler or blank cards in the empty slots of the NCS 2015 shelf.

There are two types of card fillers:

- Line card fillers (15454-M-FILLER)

These filler cards operate in slot 2 and 3 in NCS 2002, slots 2 through 7 in NCS 2006, and slots 2 through 16 in NCS 2015. These card fillers do not have card-level LED indicators. The following figure shows the faceplate of line card filler.

Figure 2: Line Card Filler - Faceplate



- Timing and Control Card fillers (15454-M-T-FILLER)

These filler cards are for control cards and operate in Slot 1in NCS 2002, Slots 1 and 8 in NCS 2006, and Slots 1 through 17 in NCS 2015. The following figure shows the faceplate of timing and control card filler.

Figure 3: Timing and Control Card Fillers - Faceplate



Blank cards (15454-BLANK) can be installed in any empty slot in the shelf. CTC does not detect blank cards. The following figure shows the faceplate of blank card filler.

Figure 4: Blank Card Filler - Faceplate

